



SSD7505

PCIe 4.0 x16 4-Port M.2 NVMe RAID HBA



The Industry's Fastest & 4-Channel PCIe Gen4 NVMe RAID Controller

The SSD7505 is the industry's fastest and most versatile 4-Channel PCIe Gen4 NVMe RAID HBA. The compact single-width controller can be easily integrated into any industry standard computing platform with a PCIe 4.0 x16 slot, and supports up to four 2242, 2260 or 2280 form-factor M.2 NVMe SSDs of any capacity in one or more RAID 0, 1 or 10 configurations at speeds up to 25,000MB/s! In addition, the SSD7505 can be configured to host bootable SSDs or arrays for Linux and Windows platforms.

Performance Focused Hardware Architecture & NVMe Technology

HighPoint's unique performance-focused NVMe architecture utilizes intelligent switch technology to allocate up to x4 lanes of bandwidth to each NVMe device port. This enables the SSD7505 4-port M.2 RAID controller to fully saturate x16 lanes of host bandwidth using as little as four NVMe SSDs.

Multi-CPU/Core Performance Optimizer:

multi-core/Multi-CPU platforms have plentiful resources, but these may not be properly allocated to the target application and NVMe media. HighPoint's HPT-Optimize utility Simplifies the Complicated Tuning Process for all Multi-Core platforms.

Cross-Sync RAID Technology: The SSD7505 enables administrators to optimize RAID performance by scaling available bus bandwidth up to 32 lanes, and deliver up to 50,000MB/s of transfer performance.

Advanced Gen4 Cooling System Eliminates Thermal Throttling

HighPoint's Low-Noise Hyper-Cooling solution eliminates the risk of thermal throttling by ensuring PCIe Gen4 NVMe SSDs consistently operate within their recommended temperature thresholds, even under sustained heavy I/O.

Each controller features a full-length anodized aluminum heat sink that is equipped with one or more ultra-durable, low-decibel fans and high-conductivity thermal pads. This innovative, ultra-efficient cooling system rapidly transfers waste heat away from critical NVMe and controller componentry, without introducing unwanted distraction into your work environment.

Comprehensive NVMe RAID Support

HighPoint 7500 Series NVMe RAID controllers will automatically recognize new NVMe SSDs as single drives; no configuration necessary. In addition, our comprehensive NVMe RAID stack enables each controller to support RAID multiple RAID arrays or mixed configurations of single disks and RAID storage.

RAID 10 (Security & Speed) - RAID 10 requires a minimum of 4 NVMe SSD's and is comprised of a stripe between two RAID 1 arrays. RAID 10 capable of delivering read performance on par with RAID 0, and is superior to RAID 5 for NVMe applications. Unlike RAID 5, RAID 10 doesn't necessitate additional parity related write operations, which reduce the TBW life span of NVMe SSDs.

RAID 0 (Speed) - Also known as a "stripe" array, this mode delivers Maximum Performance, and requires a minimum of 2 NVMe SSDs.

RAID 1 (Security) - This mode creates a hidden duplicate of the target SSD, and requires 2 NVMe SSD to configure. RAID 1 is ideal for bootable volumes.

Universal Software Suite Easily Manages & Monitors RAID Storage

HighPoint's comprehensive NVMe management suite streamlines installation, service and upgrade workflows.

Key Benefits


- Dedicated PCIe 4.0 x16 direct to CPU NVMe RAID Solution
- Truly Platform Independent
- 4x M.2 NVMe SSDs
- PCIe Gen 3 Compatible
- Up to 32TB capacity per controller
- Advanced Gen4 Cooling System
- Integrated SSD TBW and temperature monitoring capability
- Bootable RAID Support for Windows and Linux
- SRIS/SNRS/Common Clock Architecture/Topology support

Pre-OS Level Management: The UEFI Tool is a command line utility designed to configure arrays prior to OS installation.

BIOS Level Management: The UEFI HII utility will add RAID creation menus to the motherboard's BIOS interface for systems that support 3rd party HII capable devices.

OS-Level Management: The *WebGUI* is an intuitive graphical user interface designed to work with all modern Web Browsers. The CLI(Command Line Interface) is ideal for seasoned administrators and platforms that do not utilize graphical operating systems.

1-Click Self Diagnostic & Logging Service: The *WebGUI*'s Diagnostic tab enables the interface to gather all necessary hardware, software and storage configuration data and compile it into a single file.

Product feature	SSD7505
Product Image	
Bus Interface	PCI-Express 4.0 x16
Number of Channel / Port	4x M.2
Data Transfer Rates	16GT / 16Gbps per lane
Number of Devices	4x M.2 NVMe SSDs
SSD Form Factor	2242/2260/2280/22110 (supports single & double sided)
Form Factor	Full-Height
Card Dimensions	7.68" (W) x 4.41" (H) x 0.81" (D)
Card Weight	1.32 lbs.
Cooling	Full length anodized aluminum heat sink with built-in Low-Noise fans
Fan Control	Yes (Windows, macOS)
Windows Support	Windows 11 and 10, Windows Server 2022/Server 2019/Server 2016/Server 2012 R2, Microsoft Hyper-V
Linux Support	RHEL/Debian/Ubuntu/Fedora/Proxmox/Rocky Linux(Linux kernel 3.10 and later)
macOS Support	macOS 10.13 ~ macOS Ventura 13.x
PC Platform Support	<ul style="list-style-type: none"> Any PC or Motherboard with an industry standard PCIe x16 physical Slot (Bifurcation is not required). <i>Note: PCIe 4.0 required for maximum performance.</i> Thunderbolt™ 3 Connectivity (requires a PC platform with a Thunderbolt 3 port) & Thunderbolt™ Expansion chassis: RocketStor6661A.
Mac Platform Support	<ul style="list-style-type: none"> 2012 and later Mac Pro systems; 5.1, 7.1 (2019) / <i>Note: PCIe 4.0 required for maximum performance</i> Apple M1 Platform compatible Thunderbolt™ 3 Connectivity via Thunderbolt™ Expansion chassis: RocketStor6661A

NVMe RAID Management	
Management Suites	Browser-Based management tool
	CLI (Command Line Interface- scriptable configuration tool)
	API package
	UEFI Tool / UEFI HII
	BIOS interface via Human Interface Infrastructure Support (HII)
Management Features	<ul style="list-style-type: none"> • SMTP Email Alert Notification • Alarm Buzzer • Storage Health Inspector • NVMe SMART status • Automatic and configurable RAID Rebuilding Priority • Auto resume incomplete rebuilding after power on or reboot system • Single-RAID or Multi-RAID Arrays per Controller • Cross-Sync RAID Solution Across Controllers
Advanced RAID Features	SMTP Email Alert Notification
	Alarm Buzzer
	Storage Health Inspector
	NVMe SMART status
	Automatic and configurable RAID Rebuilding Priority
	Auto resume incomplete rebuilding after power on or reboot system
	Single-RAID or Multi-RAID Arrays per Controller
	Cross-Sync RAID Solution Across Controllers
Operating Environment	
Work Temp	+5°C ~ + 55°C
Storage Temp	-20°C ~ +80°C
Operating Voltage	PCI-e: 12V, 3.3V
Power	Typical: 16.44
MTBF	920,585 Hours
Certification / Approval	CE, FCC, RoHS, REACH, WEEE
Kit Contents	SSD7505
	1x SSD7505
	QIG